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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/539,751

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EXAMINER

DARE, RYAN A

ART UNIT

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/539,751	<b>Applicant(s)</b> KIM ET AL.	
	<b>Examiner</b> RYAN DARE	<b>Art Unit</b> 2186	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 06 April 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-29 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>4/12/07, 2/20/07, 6/20/05</u> .                               | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Specification*

1. The disclosure is objected to because it contains an embedded hyperlink and/or other form of browser-executable code. Applicant is required to delete the embedded hyperlink and/or other form of browser-executable code. See MPEP § 608.01.

### *Claim Rejections - 35 USC § 112*

2. Claim 9 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The last limitation of claim 9 states "a memory controller for controlling the data to be stored in the flash memory **from start and locations** of the data storage space toward a central portion." This limitation as written does not make sense and one of ordinary skill in the art would not recognize this limitation as definite. The examiner believes Applicant intended the bolded part to read "from start and end locations" and has treated as such for the rest of this Office Action.

### *Claim Rejections - 35 USC § 102*

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent

granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-4, 6-8, 20-24 and 27-28 are rejected under 35 U.S.C. 102(b) as being anticipated by Tanji, US PGPub 2001/0013269.

5. With respect to claim 1, Tanji teaches a dual journaling storing method for storing data in a storage medium, characterized in that data are stored from start and end locations of the storage medium toward a central portion, in pars. 33 and 39.

6. With respect to claim 2, Tanji teaches the dual journaling storing method according to claim 1, wherein when two types of the data whose kind and characteristic are different are stored in the storage medium, the two types of data are separately stored as a front journaling and a rear journaling, respectively, in pars. 33 and 39.

7. With respect to claim 3, Tanji teaches the dual journaling storing method according to claim 2, wherein when the front journaling and the rear journaling meet each other at a central location, data is again stored from the start location and the end location, respectively, in pars. 39-40.

8. With respect to claim 4, Tanji teaches the dual journaling storing method according to claim 2, wherein in case a head of the front journaling and a head of the rear journaling meet each other to form a central location for the first time and then the central location is formed for the second time or more, the central location moves toward the other party's journaling when the head of the front journaling or the head of the rear journaling arrives again at the central location, in pars. 39-40.

9. With respect to claim 6, Tanji teaches a method for storing data in a storage medium, comprising the steps of: dividing the data into a first data and a second data; and storing one of the first data and the second data from a start location of the storage medium, and storing the other from an end location of the storage medium toward the start location, in pars. 33 and 39.

10. With respect to claim 7, Tanji teaches the method according to claim 6, further comprising the step of: in case the first data and the second data are stored and meet each other at a central location, storing corresponding data again from the start location and the end location, respectively, in pars. 39-40.

11. With respect to claim 8, Tanji teaches the method according to claim 7, further comprising the step of: when the central location is formed for the first time and then formed for a subsequent time, moving the central location in a progressing direction of data arriving first at the central location, in pars. 39-40.

12. Claims 20-24 are rejected for similar reasons as claims 1-4.

13. With respect to claim 27, Tanji teaches the method according to claim 8, wherein a number of erasures of the storage medium is reduced by said moving the central location for each subsequent time, in pars. 39-40.

14. With respect to claim 28, Tanji teaches the method according to claim 6, wherein the first data is meta data and the second data is file data, in pars. 33 and 39-40.

15. Claims 5 and 25 are rejected under 35 U.S.C. 102(e) as being anticipated by Rodriguez et al., US Patent 6,725,241.

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16. With respect to claim 5, Rodriguez et al. teach a dual journaling storing method for inserting data into a storage medium, comprising the steps of:

when the insertion of the data into the storage medium is requested, performing a garbage collection if a storage space is insufficient, thereby moving the data and carrying out an erase operation, in col. 4, line 64 through col. 5, line 9; and

checking whether or not there is a sufficient space in the storage medium after the data storage is completed, thereby securing a storage space for a next inserted data, in col. 4, line 64 through col. 5, line 9.

17. Claim 25 is rejected using similar reasoning as claim 5.

### ***Claim Rejections - 35 USC § 103***

18. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

19. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

20. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ban, US Patent 5,404,485, in view of Tanji.

21. With respect to claim 9, Ban teaches a flash memory device comprising: a processor for generating a read/write command for reading/writing data from/to a specific address; a flash memory for providing a data storage space; and a memory controller for controlling the data to be stored in the flash memory from start and locations of the data storage space toward a central portion, in col. 3, line 52 through col. 4, line 24. Ban fails to teach that data are stored from the start and end locations of the data storage space towards a central area. Tanji resolves this deficiency in pars. 33 and 39.

22. It would have been obvious to one of ordinary skill in the art, having the teachings of Ban and Tanji before him at the time the invention was made, to modify the memory access system of Ban with the memory access system of Tanji in order to allow the storage capacity of a storage device to be effectively used without waste as a result of running out of space for either type of data, as taught by Tanji in pars. 4-5.

23. Claims 10-19, 26 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Alexis et al., US Patent 6,260,103, in view of Tanji.

24. With respect to claim 10, Alexis teaches a multiple-partitioned flash memory device comprising: a multiple-partitioned memory; a plurality of partitions provided by a multiple partition of the memory, in which data being stored are independently read, written or erased; a charge pump for providing a plurality of voltage levels necessary to

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read, write and erase the data; and a plurality of first sense amplifiers configured for a read operation, the read operation being simultaneously executable for the respective partitions; a plurality of second sense amplifiers including at least one sense amplifier configured for erase and write operations, the erase and write operations being simultaneously executable for the respective partitions, in col. 3, lines 11-40 and col. 5, lines 34-43. Alexis fails to teach that data are stored from the start and end locations of the data storage space towards a central area. Tanji resolves this deficiency in pars. 33 and 39.

25. It would have been obvious to one of ordinary skill in the art, having the teachings of Alexis and Tanji before him at the time the invention was made, to modify the memory access system of Alexis with the memory access system of Tanji in order to allow the storage capacity of a storage device to be effectively used without waste as a result of running out of space for either type of data, as taught by Tanji in pars. 4-5.

26. With respect to claim 11, Tanji teaches the multiple-partitioned flash memory device according to claim 10, wherein in case the data whose characteristic are different are stored in the storage medium, the data are separately stored as a front journaling and a rear journaling, in pars. 33 and 39.

27. With respect to claim 12, Tanji teaches the multiple-partitioned flash memory device according to claim 11, wherein in case the front journaling and the rear journaling meet each other at a central location, the data is again stored from the start location, in pars. 39-40.



28. With respect to claim 13, Tanji teaches the multiple-partitioned flash memory device according to claim 11, wherein in case a head of the front journaling and a head of the rear journaling meet each other to form a central location for the first time and then the central location is formed for the second time or more, the central location moves toward the other party's journaling when the head of the front journaling or the head of the rear journaling arrives again at the central location, in pars. 39-40.

29. With respect to claim 14, Tanji teaches the multiple-partitioned flash memory device according to claim 10, wherein the data being stored in the respective partitions are divided into a meta data and a file data, the file data being stored from the start locations of the respective partitions, the meta data being stored from the end locations of the respective partitions toward the start locations, in pars. 33 and 39.

30. With respect to claim 15, Alexis teaches a mobile terminal adopting a multiple-partitioned memory, comprising: a bus; a processor connected to the bus; a flash memory connected to the bus and accessible by the processor, the flash memory being sectioned into a plurality of partitions, wherein data being stored according to the respective partitions are independently read, written or erased; a plurality of first sense amplifiers configured for a first operation, the first operation being simultaneously executable for the respective partitions; a plurality of second sense amplifiers including at least one sense amplifier configured for a second operation, the second operation being simultaneously executable for the respective partitions, in col. 3, lines 11-40. Alexis fails to teach that data are stored from the start and end locations of the data storage space towards a central area. Tanji resolves this deficiency in pars. 33 and 39.

31. It would have been obvious to one of ordinary skill in the art, having the teachings of Alexis and Tanji before him at the time the invention was made, to modify the memory access system of Alexis with the memory access system of Tanji in order to allow the storage capacity of a storage device to be effectively used without waste as a result of running out of space for either type of data, as taught by Tanji in pars. 4-5.

32. With respect to claim 16, Tanji teaches the mobile terminal according to claim 15, wherein in case the data whose kind and characteristic are different are stored in the storage medium, the data are separately stored as a front journaling and a rear journaling, in pars. 33 and 39.

33. With respect to claim 17, Tanji teaches the mobile terminal according to claim 16, wherein in case the front journaling and the rear journaling meet each other at a central location, the data is again stored from the start location, in pars. 39-40.

34. With respect to claim 18, Tanji teaches the mobile terminal according to claim 16, wherein in case a head of the front journaling and a head of the rear journaling meet each other to form a central location for the first time and then the central location is formed for a subsequent time, the central location moves toward the other party's journaling when the head of the front journaling or the head of the rear journaling arrives again at the subsequent central location, in pars. 39-40.

35. With respect to claim 19, Tanji teaches the mobile terminal according to claim 15, wherein the data being stored in the respective partitions are divided into a meta data and a file data, the file data being stored from the start locations of the respective

partitions, the meta data being stored from the end locations of the respective partitions toward the start locations, in pars. 39-40.

36. With respect to claim 26, Alexis teaches a mobile terminal comprising:  
a bus; a processor connected to the bus; a memory connected to the bus, data being read/written from/to the memory; and a memory controller for controlling the data to be written, in col. 3, lines 11-40. Alexis fails to teach that data are stored from the start and end locations of the data storage space towards a central area. Tanji resolves this deficiency in pars. 33 and 39.

37. It would have been obvious to one of ordinary skill in the art, having the teachings of Alexis and Tanji before him at the time the invention was made, to modify the memory access system of Alexis with the memory access system of Tanji in order to allow the storage capacity of a storage device to be effectively used without waste as a result of running out of space for either type of data, as taught by Tanji in pars. 4-5.

38. With respect to claim 29, Alexis teaches the mobile terminal according to claim 15, wherein the first operation is a read operation and the second operation is a write or an erase operation, in col. 3, lines 11-40

### ***Conclusion***

39. The prior art made of record on form PTO-892 and not relied upon is considered pertinent to applicant's disclosure. Applicant is required under 37 C.F.R. § 1.111(c) to consider these references fully when responding to this action. The documents cited therein teach similar memory access systems.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to RYAN DARE whose telephone number is (571)272-4069. The examiner can normally be reached on Mon-Fri 9:30-6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matt Kim can be reached on (571)272-4182. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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July 7, 2008